

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
8 July 2004 (08.07.2004)

PCT

(10) International Publication Number
WO 2004/057817 A3

(51) International Patent Classification⁷: **H04L 12/64**,
12/56, 12/28, H04W 21/34

(21) International Application Number:
PCT/IB2003/005345

(22) International Filing Date:
20 November 2003 (20.11.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
02080374.8 19 December 2002 (19.12.2002) EP

(71) Applicant (for all designated States except US): **KONIN-
KLIJKE PHILIPS ELECTRONICS N.V.** [NL/NL];
Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **MELPIGNANO,
Diego** [IT/IT]; c/o Prof . Holstlaan 6, NL-5656 AA
Eindhoven (NL). **SIORPAES, David** [IT/IT]; c/o Prof .
Holstlaan 6, NL-5656 AA Eindhoven (NL).

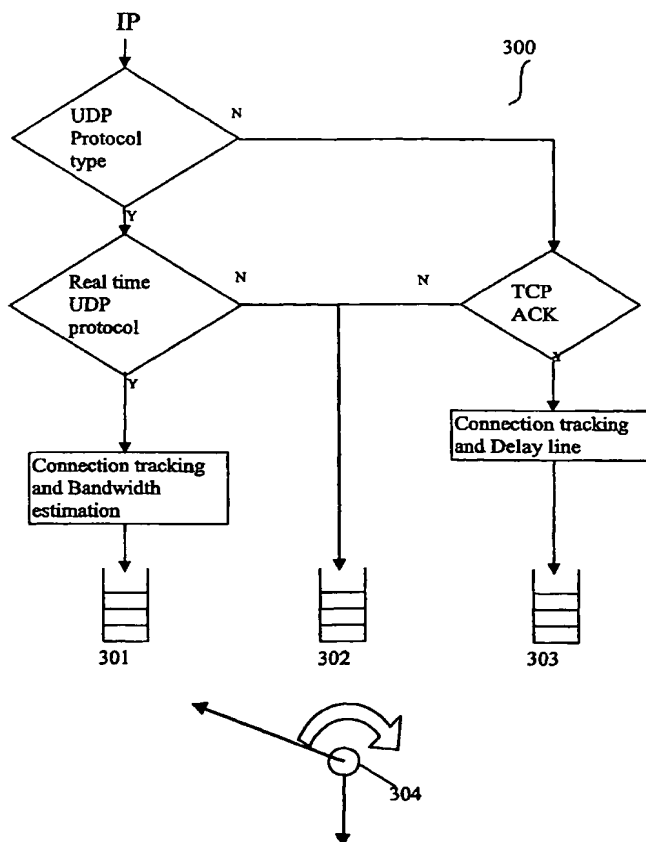
(74) Agent: **GROENENDAAL, Antonius, W., M.**; Philips
Intellectual Property & Standards, Prof. Holstlaan 6,
NL-5656 AA Eindhoven (NL).

(81) Designated States (national): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,
CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE,
GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR,
KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK,
MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT,
RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR,
TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),

[Continued on next page]

(54) Title: PROTECTING REAL-TIME DATA IN WIRELESS NETWORKS



(57) Abstract: The invention provides a traffic shaper module allocates more bandwidth to real-time data in wireless TCP/IP networks where accessible bandwidth is limited. This is particular relevant for IEEE 802.11b networks. For downstream data, the traffic shaper module can be set to control the transmission to all clients and thereby give priority to the port carrying real-time data. For the upstream case, data transmission from all kinds of standard devices is to be reduced or delayed. Hence, the data transmissions from other clients have to be controlled remotely from the access point. By delaying or discarding packets, such as TCP acknowledgements, to other clients, the traffic shaper module artificially increases their Round Trip Time (RTT). The protocol at these clients responds to the increased RTT by transmitting data at a lower rate, thereby leaving more bandwidth for the real-time data port.

WO 2004/057817 A3



Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,
SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM,
GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(88) Date of publication of the international search report:
29 December 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

INTERNATIONAL SEARCH REPORT

Int al Application No
PCT/IB 03/05345

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H04L12/64 H04L12/56 H04L12/28 H04W21/34

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H04L H04W

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 02/33909 A (CUNY RENAUD ; NOKIA CORP (FI)) 25 April 2002 (2002-04-25) page 3, line 17 - page 4, line 9 page 11, line 8 - line 18 page 14, line 14 - line 18 page 14, line 23 - line 25 figures 1,5	1-7
X	WO 99/04536 A (NOKIA TELECOMMUNICATIONS OY ; MA JIAN (FI)) 28 January 1999 (1999-01-28) page 9 page 17, line 21 - line 31 ----- -/--	1-7

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the International filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the International filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- * & * document member of the same patent family

Date of the actual completion of the international search

22 October 2004

Date of mailing of the international search report

04/11/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax (+31-70) 340-3016

Authorized officer

Eraso Helguera, J

INTERNATIONAL SEARCH REPORT

Int. Patent Application No.
PCT/IB 03/05345

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2002/031088 A1 (PACKER R L) 14 March 2002 (2002-03-14) paragraph '0037! - paragraph '0038! paragraph '0040! paragraph '0044! paragraph '0054! - paragraph '0065! -----	1-7
P,X	WO 03/043267 A (ERICSSON TELEFON AB L M ; HANSSON ULF (SE); KULLANDER JAN (SE); ROMMER) 22 May 2003 (2003-05-22) page 1, line 27 - page 2, line 1 page 4, line 14 - page 5, line 1 page 5, line 27 - page 6, line 6 figures 1,5 -----	1-7

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/IB 03/05345

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 0233909	A	25-04-2002	FI 20002320 A AU 8997701 A CA 2425230 A1 EP 1327337 A1 WO 0233909 A1 US 2003179720 A1	21-04-2002 29-04-2002 25-04-2002 16-07-2003 25-04-2002 25-09-2003
WO 9904536	A	28-01-1999	FI 972981 A FI 973746 A FI 980825 A AU 745204 B2 AU 8443498 A CN 1267419 T EP 0997020 A2 WO 9904536 A2 JP 2001510957 T NO 20000171 A AU 3607799 A EP 1068766 A2 WO 9953716 A2 JP 2003514405 T	15-01-1999 15-01-1999 10-10-1999 14-03-2002 10-02-1999 20-09-2000 03-05-2000 28-01-1999 07-08-2001 13-03-2000 01-11-1999 17-01-2001 21-10-1999 15-04-2003
US 2002031088	A1	14-03-2002	US 6298041 B1 US 6038216 A US 2004174886 A1 AU 5094498 A EP 1031163 A1 WO 9820511 A1	02-10-2001 14-03-2000 09-09-2004 29-05-1998 30-08-2000 14-05-1998
WO 03043267	A	22-05-2003	EP 1446920 A1 WO 03043267 A1	18-08-2004 22-05-2003